

SYSTEM AUDIT REPORT NUMBER **99/35812/S02**THIS REPORT RELATES TO **SURVEILLANCE**VISIT ON **2/22-24/99**Company **MARSHALL SPACE FLIGHT CENTER**

Other Sites Visited

1. **N/A**Address **Bldg. 4203** **Huntsville, AL 35812**2. **N/A**

Scope: ALL PROCESSES FOR PROCUREMENT, DESIGN, DEVELOPMENT, AND ONSITE PRODUCTION OF FLIGHT HARDWARE, FLIGHT SOFTWARE, AND ASSOCIATED GROUND SUPPORT EQUIPMENT INTERFACING WITH FLIGHT HARDWARE AND SOFTWARE, FOR WHICH MSFC HAS RESPONSIBILITY.

Standard(s) **ISO-9001:94**Support Documentation(s) **N/A**Non-English Languages Used **N/A****Comments/Concerns of the Assessment Team:**

No adverse trends detected. Recommend for continued Registration to ISO-9001:1994.

• The visit is deemed to be

Satisfactory

• Unsatisfactory visits may result in a change to the next audit activity.

• **Corrective Action Plan (CAP) Instructions:**

- ☒ Return CAP in 20 working days (all NCs & QS-9000 Ois).
- Certificate processing initiates after receipt/acceptance of CAPs.
- ☐ QS-9000 Ncss must be cleared prior to certificate issuance.
- ☐ Return CAP in ten days for major NCs issued during surveillance.

NQA ASSESSMENT TEAM**COMPANY INFORMATION**LEAD AUDITOR **Judge P. Lunt**MGT REP **Sid Saucier**

TEAM

TEAM

QUALITY MANUAL (REV & ISSUE DATE)

TEAM

TEAM

R/C. 2/19/99

The contents of this report is confidential and must not be disclosed to a third party without prior agreement of NQA, USA and the company named above.

Non-compliances/non-conformances raised or observations noted within this report are the result of limited sampling and therefore non-compliances/non-conformances may exist which have not been identified.

The company representative's signature indicates their agreement and understanding of any non-compliances/non-conformances and observations contained in this report.

Prior to the assessment, the company must have completed a complete system internal audit and subsequent management review documented. The quality system shall be understood throughout the organization.

Signature 
NQA, USA RepresentativeDate **2/24/99**Signature 
Company RepresentativeDate **2-24-99**Page **1** of **6**

SYSTEM REVISION STATUS AND AUDIT MATRIX

X indicates reference point for assessment. Note: X through entire box as applicable to indicate actual function/process audited against ISO 9000 requirement.		SPECIFIC ISO 9000 REQUIREMENTS									NEXT VISIT PLAN
		FUNCTIONS/PROCESSES AUDITED DURING THIS VISIT									
ISO 9000 REQUIREMENTS		CNTR DIR	DIV DIR	QMR	DESIGN	CALIB	N/C PROD	QUALITY	PURCH		
Mgt. Responsibility	4.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Quality System	4.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Contract Review	4.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Design Control	4.4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Document & Data Control	4.5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Purchasing	4.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Control of Customer Supplied Product	4.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Product Identification & Traceability	4.8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Process Control	4.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inspection & Testing	4.10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Control of Inspection, Measuring & Test Equip.	4.11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inspection & Test Status	4.12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Control of Non-Conforming Product	4.13	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Corrective & Preventive Action	4.14	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Handling, Storage, Packaging, Preservation & Delivery	4.15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Control of Quality Records	4.16	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Internal Quality Audits	4.17	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Training	4.18	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Servicing	4.19	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Statistical Techniques	4.20	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Customer Complaints		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Use of NQA Logo		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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AUDIT RECORD

ISO 9000
CLAUSES

Applicable
Standard

Non Compliances
Or Observations

Auditor(s) Judge P. Lunt

ISO 9001

Reviewed the USE-OF-LOGO requirements with Sr. Quality Engineer. At the present time, they are utilizing the LOGO on the MSFC FY-99 Implementation Plan booklet.

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4.1

ISO 9001

Reviewed Management Responsibility element with Center Dir., Acting Dir. Science & Engineering, QMR, and Sr. Quality Engineering. Sampled procedure MSFC-P01.1 R/A, MSFC-P16.1 R/B, and the following objective evidence:

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- NASA/MSFC Charter, MC-02-A
- Management Review Meeting minutes: (8/21/98, 12/29/98, 2/10/99)
- Internal Audit summary: (12/29/98, 2/10/99)
- Focus Team Meeting: (12/08/98)
- Corrective Action summary: (12/29/98, 2/10/99)
- NCR distribution by element chart: (12/29/98)
- Customer Feedback summary: (12/29/98)
- Action Item Status: (2/10/99)

4.2

ISO 9001

Reviewed the status of level I and II DQS documents with the Sr. Quality Engineer:

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- Level I: Quality Manual, MSFC-MQM, R/C, 2/19/99
- Level II: MSP's, (various rev's)

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AUDIT RECORD

ISO 9000
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Auditor(s) Judge P. Lunt

4.4 ISO 9001

Reviewed Design Control element with Project Managers, Chief Eng., Config. Manager, and ISO Rep. For MG. Sampled procedure MSFC-P04.1 R/C and the following objective evidence:

A.) VCD Project (Vapor Compression Distillation)

- Task Agreement for FY-98 (12/2/97)
- Project Plan #SLS-VCD-001
- RVCD #MSFC-RQMT-2823 (12/10/98)
- VCD-FE Preliminary Layout
- Assembly CDR (7/8/98, 9/18/98)
- Milestone Schedule (2/22/99)
- RID #VCDA34, # VCDA37
- Validation Labels for Drawing #12204 R/A, #12210 R/A, #12217 R/A
- Manuf. Work Order #889-041 for p/n 96M18804-1
- Altered Item Drawing #96M18084 R/O
- VCD-FE Hardware Assessment Reports for p/n 96M11075, and p/n 96M11200.

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B.) DCPCG Project:

- Task Agreement MG-MS-EJ-164 (11/30/98)
- PDR Plan (12/23/98)
- Milestone schedule (1/31/99)
- UAB PDR Submittal letter (12/12/97)
- PDR Drawing Submittal (12/12/97)
- RID's #DCPCG-1, #DCPCG-2, #DCPCG-5
- Project Plan MSFC-PLAN-2785 (6/16/98)
- Performance Specification PCG-S-006 (11/5/98)

4.11 ISO 9001

Reviewed Control of Inspection, Measuring, and Test Equipment element with Technical Monitor for Calibration Facility, Calibration Contract Manager, Contract Specialist, and Secretary II. Sampled procedure MSFC-P11.1 R/E, #3.7 (2/1/98), #2-0132 (5/5/98), and the following objective evidence:

- Recall Report on data base (2/99)
- Cat. I thru Cat. V, Att. A, in P11.1
- Calibrated Instruments, associated records, and calibration Interval for:
 - A.) #783851, Charge Amplifier
 - B.) #M630328, LCR Meter
 - C.) #M642726, 5000 PSI Gage
 - D.) #1012889, Scanning Thermometer
 - E.) #C65770, 300PSI Gage
 - F.) #M629896, Master Pin Gage
 - G.) #624658, Master Gage Blocks
 - H.) #M631324, Master Gage Blocks
- Re-Calibration in-process for #M633756
- Verified contract requirements for calibration contractor Teledyne Brown Engineering (#01111).

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ISO 9000
CLAUSES Applicable
Standard

AUDIT RECORD

Non Compliances
Or Observations

Auditor(s) Judge P. Lunt

4.13 ISO 9001

Reviewed Control of Nonconforming Product element with QA Engineer, and QA Specialist. Sampled procedure MSFC-P13.1 R/D and the following objective evidence:

- Bldg 4705 MRB Storage Cabinet
- Open Discrepancy Report (2/18/99)
- Open DR's #6770, #6771, #6672, #6773
- Closed DR's #6795, #6796
- TDR Records and Logs for:
 - A.) MTCP-FC-AEROGEL-301 (7/16/98)
 - B.) MTCP-QC-MPEVISA-300 (8/17/98)
 - C.) MTCP-FC-MPEVESA-302, Run #1 & #2, (6/23/98)

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4.14 ISO 9001

Reviewed Corrective and Preventive Action element, as well as Customer Complaints, with Systems Analyst II, and Supervisor Problem Assessment Center. Sampled procedure MSFC-P14.1 R/B, MSFC-14.1-C01 R/B, S&MA-CR10-R-Y-012 R/B, and the following objective evidence:

- PAC Open RCAR Action Tracking (2/22/99)
- Open RCAR's #103, #96, #100, #91, #54
- Closed RCAR's #93, #63

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There have been no Customer Complaints received since the Assessment Audit in February 1998. They have received ten (10) positive customer responses as noted with the following sample:

- #10, Lewis Research Center Cleveland
- #9, Boeing Houston
- #8, Boeing Houston
- #7, Allied Signal Baltimore

Also, I reviewed the CAP's for NQA report #98/35812/S01 and was able to close all issues.

4.17 ISO 9001

Reviewed Internal Quality Audits element with Audit Manager. Sampled procedure MSFC-P17.1 R/F and the following objective evidence:

- 1999 Internal Audit schedule (12/31/98)
- Internal Audit NCR's #245, #168
- Internal Auditor Training Records: W. Gramwell, R. Wegrich, J. Pea, G. Parrish, R. Malone, M. Stroud, S. Bernier, J. Anderson, W. Whitacre
- Internal Audits:
 - A.) 4.3, 4.5, 4.6, 4.16 dated 11/16/98
 - B.) 4.1, 4.4, 4.2 dated 9/14-18/98
 - C.) 4.1, 4.5, 4.18 dated 11/2-6/98
 - D.) 4.5, 4.13, 4.14, 4.16 dated 4/27/98 thru 5/1/98

2 3

Total 4

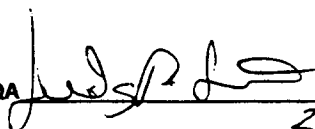
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Ref No.	Clause No.	Applicable Standard	NONCONFORMANCE AND OBSERVATIONS RAISED	NC	O
1	4.1	ISO 9001	Feedback from ISO Implementation Meetings and Focus Team Meetings not included in Management Review Meeting minutes. Also, the agenda and required attendees not formalized for these meetings.		O
2	4.4	ISO 9001	Original drawings for VCD project, and several others, are rolled up and placed on top of the filing cabinets in room 2433, Bldg. #4203.	NC	
3	4.4	ISO 9001	Historical drawings are reviewed as part of VCD design review and identified with a Validation Label to identify its status. This requirement is not identified in any procedure.		O
4	4.13	ISO 9001	There is no copy of TDR #2 included with Run #1 for MTCP-FC-MPEVESA-302 (6/23/98) as required in procedure MSFC-P13.1 R/D, para 4.3.e.	NC	
5	4.17	ISO 9001	Internal Audit checklist not available for review for Internal Audit dated 11/16/98 for element 4.2, 4.5, 4.6, and 4.16.	NC	
6	4.17	ISO 9001	Definition for required Internal Audit objective evidence is vague in procedure MSFC-P17.1 R/F.		O
7	4.17	ISO 9001	Internal Audits reviewed exhibit inconsistent recording of objective evidence.		O
8	4.17	ISO 9001	No clear plan procedurally as to who, when, or how MSFC will audit the element 4.17 to satisfy the issue of independent/no conflict.	NC	
9	4.17	ISO 9001	The requirement for Management Rep. to approve Internal Audit schedule is not clearly specified in procedure MSFC-P17.1 R/F.		O

Signed for NQA


2/24/99

Signed for Company


2-24-99

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